

**Amendments to the Specification:**

Please replace the paragraph on page 7, line 21, with the following:

In at least some embodiments of the invention, the updated pad conditioning parameters are calculated by determining the difference between an output of the pad wear and conditioning model and said determined wafer material removal, or in at least some embodiments, the updated pad conditioning parameters are updated according to the equation  $k = (k-1) + g * (k - (k-1))$ ,  $k = (k_1) + g * (k - (k_1))$ , where  $k$  is a measured wafer material removal rate,  $k_1$  is a calculated wafer material removal rate,  $g$  is the estimate gain, and  $(k - (k_1))$  is the prediction error.